Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Federally-Enforceable Synthetic Minor/Title V Draft Permit - No. V-*99-051*
RIVERSIDE GENERATING COMPANY
ROUTE 2
CATLETTSBURG, KY
June 2, 2000
C. FORGACS-PERMIT ENGINEER

a. Source Description:
The proposed project is to be located in Lawrence county, Kentucky near Catlettsburg. Riverside Generating Company of Houston, Texas is proposing to construct an independent power production facility, a peaking station, consisting of three simple-cycle gas-fired combustion turbines with three support units (a fuel gas heater of 4.92 MMBTU/hour fuel input capacity, a diesel-fired emergency generator (250 kW), and diesel-fired emergency fire water pump (310 hp)). Additionally, there will be a natural gas fuel handling system with minimal fugitive emissions. The three turbines will be Siemens-Westinghouse 501FD models, each with a maximum generation capacity of 208 MW and a nominal capacity of 176 MW. The combustion turbines have a maximum fuel input capacity of 2,076 MMBTU/hour. The turbines will be equipped with dry low-nitrogen oxide burners for NO_x emission control. The only fuel to be fired in the turbines is natural gas.

b. Facility Location and Attainment Status:
This facility is located in Lawrence County, Kentucky. Lawrence County is classified as attainment or cannot be classified for all criteria pollutants.

c. Comments:
1. Emission factors and their source:

Emission factors for the gas-fired combustion turbines are based on Siemens-Westinghouse vendor data, shown on p. A-7 of the application. The annual emissions are based on Siemens-Westinghouse Case 4 which represents the turbine performance at the average annual temperature of 57 ^{o}F. The particulate emissions are per USEPA Method 5 (filterable). The emissions cap of 245 tons per year is to be implemented for nitrogen oxides and carbon monoxide in order to preclude Regulation 401 KAR 51:017, Prevention of significant deterioration of air quality.

Fuel gas heater emission factors are provided by Gastech (vendor).

The emergency generator and emergency fire-water pump emission factors are from AP-42 (Table 3.3-1, 10/96) for 250 hours per year operation. The emergency generator and emergency fire-water pump sulfur dioxide emissions are based on diesel fuel sulfur content 0.05 %.

2. Applicable regulations:
Regulation 401 KAR 60:005, incorporating by reference 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines, for emissions unit with a heat input at peak load equal to or greater than 10 MMBTU/hour for which construction commenced after October 3, 1977

3. Regulations not applicable due to definition of affected facility:

Regulation 401 KAR 59:015, New indirect heat exchangers, incorporating by reference 40 CFR 60, Subpart D

Regulation 401 KAR 59:016, New electric utility steam generating units, incorporating by reference 40 CFR 60, Subpart Da

Regulation 401 KAR 60:005, incorporating by reference 40 CFR 60, Subpart Db, Standards of performance for industrial-commercial-institutional steam generating units

Regulation 401 KAR 60:005, incorporating by reference 40 CFR 60, Subpart Dc, Standards of performance for small industrial-commercial-institutional steam generating units

Regulation 401 KAR 51:017, Prevention of significant deterioration of air quality

4. Synthetic Minor - Pollutants and Emission Limitations:
The permit and source will be a synthetic minor because potential emissions of greater than 250 tons per year are possible without the emissions cap being proposed for nitrogen oxides and carbon monoxide. The permittee has agreed to an emissions cap of 245 tons per year, based on any 12 consecutive months, for both nitrogen oxides and carbon monoxide to preclude Regulation 401 KAR 51:017, Prevention of significant deterioration of air quality. The permittee will assure compliance for each pollutant with use of continuous emission monitors, a calculation procedure based on EPA methods, and monthly tracking of total emissions on a rolling basis. Sulfur content of natural gas fuel is being limited to the amount proposed in the application of 1.0 grain/100 SCF in order to preclude Regulation 401 KAR 51:017 also. This is necessary because the NSPS (40 CFR 60 Subpart GG) limitation of 0.8 weight percent sulfur in fuel would result in potential emissions greater than PSD thresholds. Hazardous air pollutant (HAP) emissions are estimated to be less than 10 tons/year of a single one, and less than 25 tons/year of any combination of HAPs given the limitations necessary to maintain the emissions caps for nitrogen oxides and carbon monoxide, estimated for 4800 hours of operation, total, for all turbines, therefore, case-by-case MACT should be precluded. The permittee may assure compliance by calculating HAP emissions and tracking and totaling emissions assuring Title V thresholds are not exceeded..

5. Synthetic Minor - Control Device Requirements:
The permittee will operate dry low-nitrogen oxide burners with each gas-fired combustion turbine to attain a 15 ppmvd at 15 % oxygen NO_x emission level.

d. Conclusion:

With this construction, Riverside Generating Company potential nitrogen oxides and carbon monoxide emissions for this project are effectively limited to 245 tons per year for each pollutant from the combustion turbines and natural gas heater, thus precluding a NSR/PSD review. The sulfur content of natural gas fuel is also limited below the 40 CFR 60 Subpart GG level to assure that NSR/PSD review is precluded. Emissions from insignificant activities are calculated to be 2.5 tons/year nitrogen oxides and 0.54 tons/year carbon monoxide for emergency units. Hazardous air pollutants' emissions should inherently be less than Title V levels given the limitations and operations necessary to achieve the nitrogen oxides and carbon monoxide emission levels. Thus, case-by-case MACT determination should not be necessary.